

CLAIM AMENDMENTS

Please cancel claims 1 and 2, and amend claims 15, 17, 20, and 23, as follows:

Claims 1-2 (canceled)

Claim 3 (original) A method for manufacturing a semiconductor device, comprising:

a step of forming a surface resin layer on a surface of a semiconductor substrate,

a step of forming a back side resin layer on a back side of the semiconductor substrate, and

a back side grinding step of thinning the semiconductor substrate by removing the back side resin layer, through polishing or grinding, from the semiconductor substrate provided with the surface resin layer and the back side resin layer, and by further polishing or grinding the back side of the semiconductor substrate from which the back side resin layer has been removed.

Claim 4 (original) A method for manufacturing a semiconductor device as claimed in claim 3, further comprising a cutting out step of cutting out pieces of semiconductor devices by cutting the semiconductor substrate along cutting lines after completing the back side grinding step.

Claim 5 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 3, further comprising a step of forming projection electrodes on the surface of the semiconductor substrate before forming the surface resin layer.

Claim 6 (original) A method for manufacturing a semiconductor device as claimed in claim 5, in which the surface resin layer is formed in such a manner that the projection electrodes are embedded in the surface resin layer.

Claim 7 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 5, further comprising a surface grinding step of exposing the projection electrodes from the surface resin layer by polishing or grinding the surface resin layer.

Claim 8 (original) A method for manufacturing a semiconductor device as claimed in claim 7, in which the surface grinding step is performed before the back side grinding step.

Claim 9 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 3, in which the surface resin layer and the

back side resin layer are so formed as to have substantially the same thicknesses respectively.

Claim 10 (original) A semiconductor device comprising
a solid device,
a semiconductor chip bonded onto a surface of the solid device,
projection electrodes for external connection formed on the surface of the
solid device, and
a protective resin layer for sealing the surface of the solid device with head
portions of the projection electrodes thereon exposed.

Claim 11 (original) A semiconductor device as claimed in claim 10, in which
the solid device includes another semiconductor chip.

Claim 12 (previously presented) A semiconductor device as claimed in claim
10, in which the semiconductor chip is bonded face-down onto the solid device with
an active surface of the semiconductor chip opposed to the solid device.

Claim 13 (original) A semiconductor device as claimed in claim 10, in which
the solid device includes a substrate.

Claim 14 (original) A semiconductor device as claimed in claim 13, in which the semiconductor chip is bonded face-down onto the substrate with an active surface of the semiconductor chip opposed to the substrate.

Claim 15 (currently amended) A semiconductor device as claimed in claim 13, in which the substrate is provided with through holes enabling the electrical connection from a back side of the substrate to base ~~portions~~ portions of the projection electrodes.

Claim 16 (original) A semiconductor device as claimed in claim 1, in which the through holes are provided right below the projection electrodes.

Claim 17 (currently amended) A method for manufacturing a semiconductor device, comprising:

a chip bonding step of bonding a plurality of semiconductor chips face-down onto a surface of a semiconductor substrate with active surfaces of the semiconductor chips opposed to the surface of the semiconductor substrate,

an electrode forming step of forming a plurality of projection electrodes on the surface of the semiconductor substrate,

a resin sealing step of sealing, with a protective resin, the semiconductor ~~chip~~ chip and the exposed surface of the semiconductor substrate after forming the

projection electrodes in such a manner that head portions of the projection electrodes are exposed, and

a cutting out step of taking out individual pieces of chip-on-chip type semiconductor devices by cutting the semiconductor substrate along predetermined cutting lines.

Claim 18 (original) A method for manufacturing a semiconductor device as claimed in claim 17, in which the resin sealing step includes an electrode exposing step of exposing the head portions of the projection electrodes by removing a surface layer section of the protective resin.

Claim 19 (original) A method for manufacturing a semiconductor device as claimed in claim 18, in which the electrode exposing step includes a chip grinding step of simultaneously polishing or grinding the protective resin and an inactive surface side of the semiconductor chip.

Claim 20 (currently amended) A method for manufacturing a semiconductor device as claimed in claim 17, in which a back side of the semiconductor substrate or an inactive surface side of the semiconductor chip chips is polished or ground before the cutting out step.

Claim 21 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 17, in which the projection electrodes are formed to be higher than the active surface of the semiconductor chip and lower than an inactive surface of the semiconductor chip.

Claim 22 (original) A method for manufacturing a semiconductor device, comprising:

a chip bonding step of bonding a semiconductor chip face-down onto a surface of a substrate with an active surface thereof opposed to the surface of the substrate,

an electrode forming step of forming projection electrodes on the surface of the substrate so as to be protruded from the surface of the substrate, and

a resin sealing step of sealing, with a protective resin, the semiconductor chip and the projection electrodes in such a manner that head portions of the projection electrodes are exposed.

Claim 23 (currently amended) A method for manufacturing a semiconductor device as claimed in claim 22, in which

~~a plurality of semiconductor chips are bonded onto the substrate in the chip bonding step, and~~

— ~~a plurality of groups of projection electrodes corresponding to the plurality of semiconductor chips are formed in the electrode forming step, comprising:~~

a chip bonding step of bonding a plurality of semiconductor chips face-down onto a surface of a substrate with an active surface thereof opposed to the surface of the substrate,

an electrode forming step of forming a plurality of groups of projection electrodes corresponding to the plurality of semiconductor chips on the surface of the substrate so as to be protruded from the surface of the substrate,

a resin sealing step of sealing, with a protective resin, the semiconductor chips and the projection electrodes in such a manner that head portions of the projection electrodes are exposed, and

~~the method further comprising a cutting out step of taking out individual pieces of semiconductor devices by cutting the substrate along predetermined cutting lines.~~

Claim 24 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 22, further comprising a step of forming through holes enabling an electrical connection from a back side of the substrate to base portions of the projection electrodes.

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Claim 25 (previously presented) A method for manufacturing a semiconductor device as claimed in claim 22, in which the resin sealing step includes a step of sealing, with a protective resin, the projection electrodes and the semiconductor chip and a step of removing a surface layer section of the protective resin so as to expose the head portions of the projection electrodes.

AMENDMENT

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